AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A sparse array antenna comprising series-fed antenna array columns comprising transmitting array columns and receiving array columns tuned to a respective transmit and receive frequency, each transmitting array column having multiple transmitting radiator elements and each receiving array column having multiple receiving antenna elements, wherein:

said transmitting array columns are formed with a given distance between each one of the transmitting radiator elements, and a distance between each transmitting array column in the array antenna is one wavelength of the transmitting frequency, and

said receiving array columns are formed with a given distance between each one of the receiving radiator elements, and a distance between each receiving array column in the array antenna is one wavelength of the receiving frequency, and

the series-fed antenna columns being arranged in parallel to each other, thereby forming a symmetric interleaved transmit/receive array;

receiving radiator elements in the receiving array columns operate as parasitic elements in a transmit mode and transmitting radiator elements in the transmitting array columns operate as parasitic elements in a receive mode to reduce creation of grating lobes,

wherein the sparse array antenna includes a main radiation lobe and is arranged to be scannable in more than one direction to reduce sidelobes entering visual space when scanning the main radiation lobe from an off boresight direction.

2. Canceled

3. (previously presented) The antenna according to claim 1, wherein the series-fed array columns are formed as extended ridged slotted wave-guides, comprising slotted transmitting wave-guides and slotted receiving wave-guides, tuned to said respective transmitting and receiving frequency.

4. (original) The antenna according to claim 3, wherein when having number n of slots in each slotted transmitting wave-guide the number of slots in each slotted receiving wave-guide being generally $n \pm x$, where x represents an integer digit (x =0, 1, 2, 3 ...).

5. (previously presented) The antenna according to claim 1, wherein the series-fed array columns are formed as extended transmission lines containing radiation elements, the array columns being tuned to said respective transmitting and receiving frequency.

6. Canceled.

7. (previously presented) The antenna according to claim 1, wherein each one of the series-fed antenna columns is narrowly tuned within a respective frequency band to thereby reduce coupling between the transmitting and receiving bands used.

8. (previously presented) The antenna according to claim 1, wherein the series-fed antenna array columns are connectable to and feedable from an active receive/transmit (T/R) module.

9. (previously presented) The antenna according to claim 1, wherein only one set of series-fed columns being actively used and another interleaved set of series-fed columns may be terminated by a load forming parasitic columns of the sparse array antenna.

10. (previously presented) The antenna according to claim 1, wherein said wave-guides are arranged symmetrically about a line that extends through a center of each wave-guide.